



US010929885B2

(12) **United States Patent**
Vassilvitskii et al.

(10) **Patent No.:** **US 10,929,885 B2**

(45) **Date of Patent:** **Feb. 23, 2021**

(54) **VALUING ADVERTISEMENTS ON A MAP**

(56) **References Cited**

(71) Applicant: **Google LLC**, Mountain View, CA (US)

U.S. PATENT DOCUMENTS

(72) Inventors: **Sergei Vassilvitskii**, San Francisco, CA (US); **Mohammad Mahdian**, Santa Clara, CA (US)

8,126,770 B2 2/2012 Lim
8,676,650 B1 3/2014 Jurca
2004/0073538 A1 4/2004 Leishman et al.
2006/0224447 A1 10/2006 Koningstein

(Continued)

(73) Assignee: **Google LLC**, Mountain View, CA (US)

FOREIGN PATENT DOCUMENTS

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

CN 101496049 7/2009
WO 2007/070358 6/2007

(21) Appl. No.: **16/411,606**

OTHER PUBLICATIONS

(22) Filed: **May 14, 2019**

China National Intellectual Property Administration Notification of First Office Action and Search Report in Chinese Application No. 201680019499.8, dated Jun. 21, 2019, 30 pages (with English translation).

(65) **Prior Publication Data**

US 2019/0333107 A1 Oct. 31, 2019

(Continued)

Related U.S. Application Data

Primary Examiner — Michelle Chin

(74) *Attorney, Agent, or Firm* — Fish & Richardson P.C.

(63) Continuation of application No. 15/912,085, filed on Mar. 5, 2018, now Pat. No. 10,304,087, which is a continuation of application No. 15/488,744, filed on Apr. 17, 2017, now Pat. No. 9,922,346, which is a continuation of application No. 14/682,563, filed on Apr. 9, 2015, now Pat. No. 9,626,781.

(57)

ABSTRACT

The subject matter of this specification can be embodied in, among other things, a system includes a map store, a map server, and a content server. The map server identifies a set of content items in which each content item is associated with a geographic location that is presented in a portion of a map, determines, for a given content item, an adjusted value of a given content item based at least in part on a base value for the content given item and a set of adjustment factors for one or more other content items in the set of content items, selects content items from the set of content items based on the adjusted values, and provides data that present the selected content items on the portion of the map presented at the device.

(51) **Int. Cl.**

G06Q 30/02 (2012.01)

G06T 11/20 (2006.01)

(52) **U.S. Cl.**

CPC **G06Q 30/0261** (2013.01); **G06T 11/206** (2013.01); **G06Q 30/0241** (2013.01); **G06Q 30/0251** (2013.01)

(58) **Field of Classification Search**

None

See application file for complete search history.

21 Claims, 6 Drawing Sheets

